Claims:

1. A method of determining a physical property of a wood member which comprises:

determining the length of the wood member;

relating the length of the wood member to the range within which the resonant frequency of the member is expected to fall;

providing an swept audio frequency energy impulse directed at the wood member, the frequency sweep falling within a range of about 100-1000 Hz within a period less than about 1 second;

adjusting the frequency sweep range dependent on the member length, the sweep range encompassing at least the range within which the resonant frequency of the member is expected to fall;

sensing the response to the audio energy impulse within the wood member so as to determine the actual resonant frequency of the member; and

relating the resonant frequency to the physical property being measured,

whereby by adjusting the sweep range to a relatively narrow band encompassing the expected resonant frequency range of the wood member, the energy introduced into the wood member is maximized and the resolution of the sensed response is increased.

2. The method of claim 1 in which the frequency is swept about ±300 Hz either side of the midpoint of the anticipated resonant frequency range of the wood member.

3. The method of claim 1 in which the frequency is swept at least about ±100 Hz either side of the midpoint of the anticipated resonant frequency range of the wood member

4. The method of claim 1 in which sweep time is no longer than about 0.2 seconds.

5. The method of claim 4 in which the sweep time is no longer than about 0.1 second.

6. The method of claim 1 in which the wood member is a log.

7. The method of claim 1 in which the property being determined is modulus of elasticity.

8. The method of claim 7 in which the modulus of elasticity is used in a cutting optimizer program to determine optimum breakdown of a saw log.

9. The method of claim 1 in which the sensed response is measured by an accelerometer in contact with the wood member.

10. The method of claim 1 in which the sensed response is measured by a laser Doppler vibrometer.